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DIALOG(R)File 351:Derwent WPI

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012424415 **Image available**

WPI Acc No: 1999-230523/ 199920

XRAM Acc No: C99-067950

Method for melting fine-grained, directly reduced iron in an electric arc furnacePatent Assignee: METALLGESELLSCHAFT AG (METG); MG TECHNOLOGIES AG
(MGTE-N)

Inventor: EICHBERGER H; SCHIMO S; STROEDER M; WELLS W

Number of Countries: 030 Number of Patents: 012

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
→ DE 19744151	A1	19990408	DE 1044151	A	19971007	199920 B
WO 9918245	A1	19990415	WO 98EP6276	A	19981002	199922
AU 9910291	A	19990427	AU 9910291	A	19981002	199936
DE 19744151	C2	19990819	DE 1044151	A	19971007	199937
ZA 9809098	A	20000628	ZA 989098	A	19981006	200037
EP 1025267	A1	20000809	EP 98952689	A	19981002	200039
			WO 98EP6276	A	19981002	
BR 9812880	A	20000808	BR 9812880	A	19981002	200044
			WO 98EP6276	A	19981002	
AU 734802	B	20010621	AU 9910291	A	19981002	200141
KR 2001024408	A	20010326	KR 2000703643	A	20000404	200161
MX 2000003480	A1	20001101	MX 20003480	A	20000407	200163
EP 1025267	B1	20011128	EP 98952689	A	19981002	200201
			WO 98EP6276	A	19981002	
JP 2001519473	W	20011023	WO 98EP6276	A	19981002	200202
			JP 2000515036	A	19981002	

Priority Applications (No Type Date): DE 1044151 A 19971007

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19744151	A1		5	C21C-005/52	
WO 9918245	A1	G		C21C-005/52	
Designated States (National): AU BR ID JP KR MX RU TT UA US					
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU					
MC NL PT SE					
AU 9910291	A			C21C-005/52	Based on patent WO 9918245
DE 19744151	C2			C21C-005/52	
ZA 9809098	A		14	C21B-000/00	
EP 1025267	A1	G		C21C-005/52	Based on patent WO 9918245
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI					
LU MC NL PT SE					
BR 9812880	A			C21C-005/52	Based on patent WO 9918245
AU 734802	B			C21C-005/52	Previous Publ. patent AU 9910291
Based on patent WO 9918245					
KR 2001024408	A			C21C-005/52	
MX 2000003480	A1			C21C-005/52	
EP 1025267	B1	G		C21C-005/52	Based on patent WO 9918245
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI					
LU MC NL PT SE					
JP 2001519473	W		16	C21B-013/12	Based on patent WO 9918245

Abstract (Basic): DE 19744151 A1

NOVELTY - During operation of the furnace (1), directly reduced iron is fed from above into the foam slag layer (9) through at least one movable lance (6).

USE - For production of liquid iron out of sponge iron, hot-briquetted iron and steel scrap.

ADVANTAGE - Energy savings are achieved in comparison with known practices.

DESCRIPTION OF DRAWING(S) - The drawing shows a furnace for

implementation of the proposed method.

Bath for liquid iron and foam slag (2)

Furnace lid (3)

Electrode (5)

Lances (6)

Liquid iron (8)

Foam slag (9)

pp; 5 DwgNo 1/4

Title Terms: METHOD; MELT; FINE; GRAIN; REDUCE; IRON; ELECTRIC; ARC;
FURNACE

Derwent Class: M24; Q77

International Patent Class (Main): C21B-000/00; C21B-013/12; C21C-005/52

International Patent Class (Additional): C21B-011/08; F27B-003/08;
F27B-003/18

File Segment: CPI; EngPI

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011425982 **Image available**

WPI Acc No: 1997-403889/ 199738

Related WPI Acc No: 1997-403890; 1997-403891

XRAM Acc No: C97-130429

XRFX Acc No: N97-335701

**Treating steel in the course of its production in a metallurgical furnace
- with carbonic-acid gas used as transport gas for blowing solids into
the furnace**

Patent Assignee: EISENBAU ESSEN GMBH (EISE-N)

Inventor: BUJANG F; FINCK L; SMEGAL H; WIRYOMIJOYO H

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 19608530	A1	19970814	DE 1008530	A	19960306	199738 B
DE 19608530	C2	19990114	DE 1008530	A	19960306	199906

Priority Applications (No Type Date): DE 1004663 A 19960209

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19608530	A1		4	C21C-005/52	
DE 19608530	C2			C21C-005/52	

Abstract (Basic): DE 19608530 A

The method concerns treatment of steel in the course of its production in a metallurgical furnace. Solids are blown into the furnace by means of a transport gas. Pure CO₂ gas or a gas containing primarily CO₂ is used as the transport gas. Also claimed is a metallurgical furnace, in particular, an electric-arc furnace serving for implementation of the proposed method.

USE - In the metallurgical industry.

ADVANTAGE - Sufficient amounts of slag foam are produced. Lowering of the steel quality as a consequence of transport gases used in blow-in systems is avoided.

Dwg.1/1

Title Terms: TREAT; STEEL; COURSE; PRODUCE; METALLURGICAL; FURNACE;
CARBONIC; ACID; GAS; TRANSPORT; GAS; BLOW; SOLID; FURNACE

Derwent Class: M24; Q77

International Patent Class (Main): C21C-005/52

International Patent Class (Additional): C21C-005/32; F27B-003/08;
F27B-003/22

File Segment: CPI; EngPI

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DIALOG(R)File 351:Derwent WPI

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010246431 **Image available**

WPI Acc No: 1995-147686/199520

XRAM Acc No: C95-068559

Iron@ melt prodn. - with sequential introduction and programmed melting of different iron-bearing charge materials

Patent Assignee: DEUT VOEST-ALPINE IND ANL GMBH (VEOS); VOEST-ALPINE IND ANL GMBH (VEOS)

Inventor: DIMITROV S; PIRKLBAUER W; RAMASEDER N; SCHUBERT H

Number of Countries: 012 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
AT 9400064	A	19950315	AT 9464	A	19940114	199520 B
→ EP 663450	A1	19950719	EP 95890010	A	19950112	199533
AT 400247	B	19950915	AT 9464	A	19940114	199543
EP 663450	B1	20000105	EP 95890010	A	19950112	200006
DE 59507543	G	20000210	DE 507543	A	19950112	200015
			EP 95890010	A	19950112	

Priority Applications (No Type Date): AT 9464 A 19940114

Cited Patents: DE 3609923; EP 240485; FR 2611876; GB 2088904; US 2382534; US 4514218

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
AT 9400064	A		25	C21C-005/52	
EP 663450	B1	G		C21C-005/56	
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI NL SE					
DE 59507543	G			C21C-005/56	Based on patent EP 663450
EP 663450	A1	G	17	C21C-005/56	
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI NL SE					
AT 400247	B			C21C-005/52	Previous Publ. patent AT 9400064

Abstract (Basic): AT 9400064 A

The method concerns production of iron melts, in particular steel out of iron-bearing charge materials (22,29) in a metallurgical vessel (1) with the aid of energy supplied at least partially by a electric arc. A part of the material (22) is introduced into the vessel to form a cone in its central region. A central crater is melted into this cone. The crater is filled with a part of the material (29), which is then melted to produce a crater. This is followed by complete melting of the still solid materials (22,29) before a tapping operation. The plant is provided with separate shafts (21,27) for the iron-bearing charge materials (22,29).

USE - In the metallurgical industry.

ADVANTAGE - The method ensures better utilisation of energy, lower thermal loading of the metallurgical vessel, and shortening of the process times. (Reissue of the entry advised in week 9516 based on complete specification).

Dwg.1/6

Title Terms: IRON; MELT; PRODUCE; SEQUENCE; INTRODUCING; PROGRAM; MELT; IRON; BEARING; CHARGE; MATERIAL

Derwent Class: M24; Q77

International Patent Class (Main): C21C-005/52; C21C-005/56

International Patent Class (Additional): F27B-001/02

File Segment: CPI; EngPI

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007008642

WPI Acc No: 1987-008639/ 198702

XRAM Acc No: C87-003249

Mfg. steel in an arc furnace - by feeding reducing agent and reduced

material through central channel in electrode and scrap via side entrance

Patent Assignee: ASEA AB (ALLM)

Inventor: EKMAN W; LANDGREN N I; STICKLER H

Number of Countries: 004 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3621323	A	19870108	DE 3621323	A	19860626	198702 B
JP 62004813	A	19870110	JP 86148368	A	19860626	198707
SE 8503221	A	19861229				198708
CN 8604384	A	19861224				198750
SE 452990	B	19880104				198803

Priority Applications (No Type Date): SE 853221 A 19850628

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

DE 3621323 A 4

Abstract (Basic): DE 3621323 A

Steel with an adjustable carbon content is produced in a DC arc furnace by feeding highly reduced material in powder and/or pellet form together with slag formers and reducing agents through the central channel of an electrode. Scrap is fed in via (4) and the ratio of reducing agent to reduced material is controlled to produce a required end carbon content.

USE/ADVANTAGE - To produce steel with C-content of 0.1-0.4 wt.%. The whole process including low C steel production is carried out in this way.

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Title Terms: MANUFACTURE; STEEL; ARC; FURNACE; FEED; REDUCE; AGENT; REDUCE; MATERIAL; THROUGH; CENTRAL; CHANNEL; ELECTRODE; SCRAP; SIDE; ENTER

Derwent Class: M24

International Patent Class (Additional): C21B-013/12; C21C-005/52

File Segment: CPI

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DIALOG(R) File 351:Derwent WPI

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004211865

WPI Acc No: 1985-038745/ 198507

XRAM Acc No: C85-016727

XRPX Acc No: N85-028801

Electric arc and reduction furnaces - fitted with retractable chute for flux charging

Patent Assignee: MANNESMANN AG (MANS)

Inventor: KONIG H; STARK H

Number of Countries: 002 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3326505	A	19850207	DE 3326505	A	19830721	198507 B
NO 8402671	A	19850218				198514
DE 3326505	C	19860619				198625

Priority Applications (No Type Date): DE 3326505 A 19830721

Abstract (Basic): DE 3326505 A

The flux charging unit can supply a metered charge of powdered ore and limestone flux to the molten metal bath of the electric furnace. The charge is deposited in a controlled manner through a retractable, cylindrical chute, immediately above the surface level of the molten bath so minimising the possibility of excessive dust generation. The chute is retracted clear of the furnace bath after charging to avoid overheating.

USE/ADVANTAGE - The charging unit is partic. designed to handle flux charges to electric arc or electric redn. furnaces using finely ground or pulverised materials. The method of contg. the dust generated

during charging prevents overloading of the furnace gas cleaning system.

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Title Terms: ELECTRIC; ARC; REDUCE; FURNACE; FIT; RETRACT; CHUTE; FLUX; CHARGE

Derwent Class: J09; M24; Q77

International Patent Class (Additional): F27B-003/18

File Segment: CPI; EngPI

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DIALOG(R)File 351:Derwent WPI

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001826133

WPI Acc No: 1977-47126Y/ 197727

Electric arc furnace charging - through central water cooled funnel in roof terminating above arc zone

Patent Assignee: EVERTZ E (EVER-I)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2556714	A	19770630				197727 B

Priority Applications (No Type Date): DE 2556714 A 19751217

Abstract (Basic): DE 2556714 A

An electric arc furnace for a granular or pelletised charge of iron sponge, lime, etc. has above the arc zone a charging tube which protrudes into the furnace space. In the case of a three-phase furnace, this tube is arranged in the centre of the furnace roof and terminates at a distance above the arc which is determined by the angle of repose of the charge.

This allows a continuous charge instead of the intermittent basket charge with the roof removed or through the side door. Damage to the electrodes by material sliding on the crater sides is eliminated and the electrode burn up more uniformly.

Title Terms: ELECTRIC; ARC; FURNACE; CHARGE; THROUGH; CENTRAL; WATER; COOLING; FUNNEL; ROOF; TERMINATE; ABOVE; ARC; ZONE

Derwent Class: J09; L02; M24; Q77; X25; X26

International Patent Class (Additional): F27B-014/00; H05B-007/18

File Segment: CPI; EPI; EngPI

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DIALOG(R)File 351:Derwent WPI

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000657112

WPI Acc No: 1969-50934Z/ 196800

Electric arc melting - of bulk solids with high iron content

Patent Assignee: IRSF (IRSF)

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
FR 1481142	A					196800 B
BE 695680	A					196801
DE 1533922	B	19720824				197235

Priority Applications (No Type Date): FR 55979 A 19660401

Derwent Class: M24

International Patent Class (Main): C21C-005/52

File Segment: CPI